

## Rotorcraft Diagnostics, Phase I

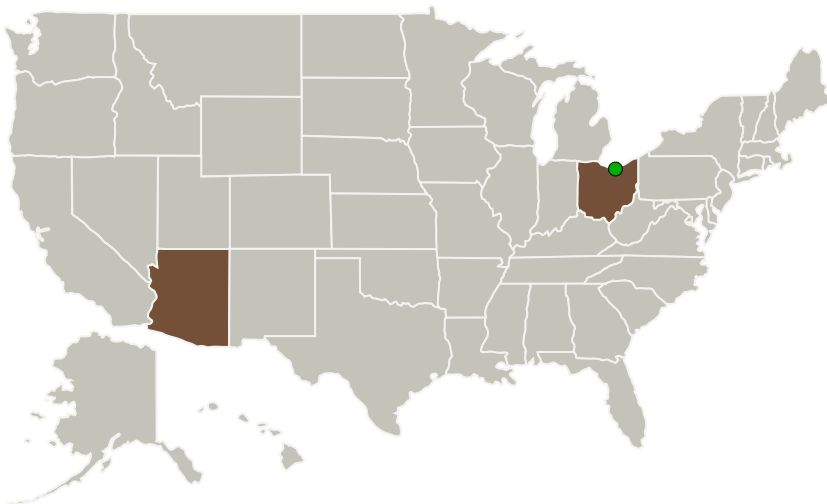
Completed Technology Project (2010 - 2010)



## Project Introduction

Under this SBIR program, Ridgetop will introduce the first low-cost, low-power, and lightweight data monitoring solution for rotorcraft diagnostics. The solution is an integrated MEMS-based sensors fabricated by a MEMS-first CMOS process methodology. The device measures temperature, shock, and vibration from multiple sensors integrated onto a single substrate that also contains submicron-scale CMOS electronics for the associated readout and data storage functions. High-sensitivity MEMS structures will be developed, and associated sense amplifiers that exploit low power transistors biased to operate in the subthreshold regions will be introduced. Further scaling in power is achieved by leveraging ultra-small geometries available in modern processes (e.g., 130 nm minimum feature length and below).

## Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
Ridgetop Group, Inc.	Lead Organization	Industry Women-Owned Small Business (WOSB)	Tucson, Arizona
● Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio



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## Organizational Responsibility

**Responsible Mission Directorate:**

Space Technology Mission Directorate (STMD)

**Lead Organization:**

Ridgetop Group, Inc.

**Responsible Program:**

Small Business Innovation Research/Small Business Tech Transfer

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## Primary U.S. Work Locations

Arizona

Ohio

## Project Transitions

**January 2010:** Project Start**July 2010:** Closed out**Closeout Documentation:**

- Final Summary Chart(<https://techport.nasa.gov/file/139946>)

## Project Management

**Program Director:**

Jason L Kessler

**Program Manager:**

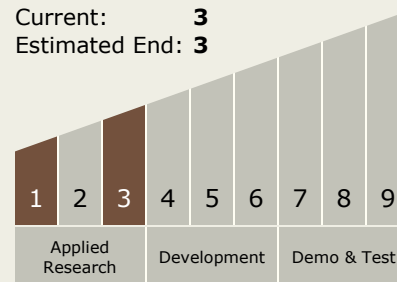
Carlos Torrez

**Principal Investigator:**

Justin Judkins

## Technology Maturity (TRL)

Start: **1**  
 Current: **3**  
 Estimated End: **3**



## Technology Areas

**Primary:**

- TX02 Flight Computing and Avionics
  - TX02.1 Avionics Component Technologies
    - TX02.1.6 Radiation Hardened ASIC Technologies

## Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System